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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,011	03/16/2004	Ba-Zhong Shen	BP3134CIP	4929
51472 7590 09/19/2007 GARLICK HARRISON & MARKISON P.O. BOX 160727 AUSTIN, TX 78716-0727			EXAMINER CHASE, SHELLY A	
			ART UNIT 2112	PAPER NUMBER
			MAIL DATE 09/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/802,011	Applicant(s) SHEN ET AL.	
	Examiner Shelly A. Chase	Art Unit 2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24-34 is/are allowed.
- 6) ☒ Claim(s) 1-23 and 35-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

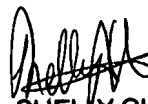
Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


SHELLY CHASE
PRIMARY EXAMINER

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04, 05 & 07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 to 57 are presented for examination.

Information Disclosure Statement

2. The references listed in the information disclosure statement submitted on 2004, 2005, and 2007 have been considered by the examiner (see attached PTO-1449).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 45 to 57 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 45 is a single means claim and the scope of the claim is not commensurate with the specification. Claims 46 to 57 are also rejected due to their dependency on a rejected base claim.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1 to 23 and 35 to 57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because the phrase "operable to perform" recited in line one is indefinite. Claims 2 to 11 are also rejected due to their dependency on a rejected base claim. Independent claims (12, 35 & 45) have a similar problem as claim 1 and are also rejected under 35 U.S.C. 112, second paragraph.

7. Claim 45 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: symbol estimating computer, bit mode calculator, edge messages as described in fig. 19.

Allowable Subject Matter

8. Claims 24 to 34 are allowed.

9. Claims 1 to 23 and 35 to 44 would be allowable once the 112 second paragraph rejection is overcome.

10. The following is a statement of reasons for the indication of allowable subject matter: the primary reason for the allowance of the claims is the inclusion of the limitation of "wherein the symbol sequence estimate and symbol node update functional block updates a plurality of symbol node update bit edge messages using the received plurality of symbol metrics and the plurality of initialized LLR bit edge messages thereby

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generating a first updated plurality of symbol node update bit edge messages;" as recited in independent claims (1, 12 & 35). With regards to claim 24, the primary reason for the allowance of the claim is the inclusion of the limitation of "updating the plurality of bit edge messages using the plurality of symbol metrics corresponding to the symbol and the plurality of bit edge messages most recently updated during check node updating." The prior art made of record teaches various methodologies for decoding using a low density parity check code and different modulation techniques; however, the prior art made of record, taken alone or in combination fails to teach or fairly suggest or render obvious the novel element of the instant invention.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee, Heung-no, *LDPC coded modulation MIMO OFDM transceiver: performance comparison with MAP equalization*, IEEE.

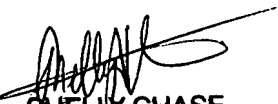
Le Goff, Stephane Y., *Signal constellations for Bit interleaved Coded Modulation*, IEEE.

Patapoutian et al. USP 7266750 B1.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shelly A. Chase whose telephone number is 571-272-3816. The examiner can normally be reached on Mon-Fri from 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on 571-272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


SHELLY CHASE
PRIMARY EXAMINER